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May 20, 2019

ArcelorMittal Indiana Harbor, LLC
3001 Dickey Road / Station 001
East Chicago, IN 46312-1610

Work Order No.: 19E0279

Re: Recertification

Dear Jay Huitsing:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 5/6/2019 11:35:00AM for the analyses presented in the following report as Work Order 19E0279.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely,
Microbac Laboratories, Inc.

Carey Gadzala
Project Manager

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WORK ORDER SAMPLE SUMMARY

Date: *Monday, May 20, 2019*

Client: ArcelorMittal Indiana Harbor, LLC
Project: Recertification
Lab Order: 19E0279

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19E0279-01	Petroleum Coal Material		05/01/2019 10:00	5/6/2019 11:35:00AM
19E0279-02	Petroleum Coal Material		05/01/2019 10:00	5/6/2019 11:35:00AM

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CASE NARRATIVE

Date: *Monday, May 20, 2019*

Client: ArcelorMittal Indiana Harbor, LLC
Project: Recertification
Lab Order: 19E0279

The Laboratory Control Sample Duplicate associated with the following sample failed the precision criteria for pyridine. The accuracy criteria were met by the Laboratory Control Sample and Laboratory Control Sample Duplicate.

Laboratory ID	Sample Name
19E0279-01	Petroleum Coal Material

The Matrix Spike and Matrix Spike Duplicate performed on the following sample failed the accuracy criteria for 2-butanone with a high bias. The precision criteria were met. This data is indicative of a bias related to sample matrix.

Laboratory ID	Sample Name
19E0279-01	Petroleum Coal Material

The following sample had quantifiable peaks in the Diesel Range. These peaks however do not match true Diesel fuel patterns, therefore the TPH as Diesel result was reported as ND.

Laboratory ID	Sample Name
19E0279-02	Petroleum Coal Material

B - the Method Blank contained GRO at a level above the reporting limit. This does not impact the data, as the concentration in the sample was below the reporting limit. This nonconformance is associated with the following sample:

Laboratory ID	Sample Name
19E0279-02	Petroleum Coal Material

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Analytical Results

Date: *Monday, May 20, 2019*

Client: ArcelorMittal Indiana Harbor, LLC
Client Project: Recertification
Client Sample ID: Petroleum Coal Material
Sample Description:
Matrix: Solid

Work Order/ID: 19E0279-01
Sampled: 05/01/2019 10:00
Received: 05/06/2019 11:35

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
TCLP Metals by ICP			Method: **1311/6010C** Prep Method: **SW-846 1311/SW846 3005A**				Analyst: **BTM** Prep Date/Time: **05/08/2019 09:07**	
Arsenic	di	A	*ND*	0.0100		mg/L	1	05/08/2019 17:31
Barium	di	A	*ND*	0.500		mg/L	1	05/08/2019 17:31
Cadmium	di	A	*ND*	0.00200		mg/L	1	05/08/2019 17:31
Chromium	di	A	*ND*	0.00500		mg/L	1	05/08/2019 17:31
Lead	di	A	*ND*	0.00750		mg/L	1	05/08/2019 17:31
Selenium	di	A	*ND*	0.0300		mg/L	1	05/08/2019 17:31
Silver	di	A	*ND*	0.0100		mg/L	1	05/08/2019 17:31
TCLP Mercury by CVAA			Method: **1311/7470A** Prep Method: **SW-846 1311/SW-846 7470**				Analyst: **JNH** Prep Date/Time: **05/08/2019 10:29**	
Mercury	di	A	*ND*	0.0010		mg/L	1	05/09/2019 13:20
TCLP Semivolatile Organic Compounds			Method: **1311/8270C** Prep Method: **SW-846 1311/SW846 3510**				Analyst: **clr** Prep Date/Time: **05/08/2019 10:10**	
2,4,5-Trichlorophenol	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
2,4,6-Trichlorophenol	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
2,4-Dinitrotoluene	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
2-Methylphenol	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
3/4-Methylphenol	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
Hexachlorobenzene	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
Hexachlorobutadiene	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
Hexachloroethane	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
Nitrobenzene	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
Pentachlorophenol	di	A	*ND*	0.25		mg/L	1	05/08/2019 20:39
Pyridine	di	A	*ND*	0.050		mg/L	1	05/08/2019 20:39
Total Cresol	di	M	*ND*	0.050		mg/L	1	05/08/2019 20:39
Surr: 2,4,6-Tribromophenol		S	88.7	47.8-138		%REC	1	05/08/2019 20:39
Surr: 2-Fluorobiphenyl		S	55.8	10-110		%REC	1	05/08/2019 20:39
Surr: 2-Fluorophenol		S	50.2	10-110		%REC	1	05/08/2019 20:39
Surr: Nitrobenzene-d5		S	61.2	10-110		%REC	1	05/08/2019 20:39
Surr: Phenol-d5		S	58.2	43.7-126		%REC	1	05/08/2019 20:39
Surr: Terphenyl-d14		S	79.7	33.7-136		%REC	1	05/08/2019 20:39
TCLP VOA Zero Head Extraction			Method: **1311/8260B** Prep Method: **SW-846 1311/SW-846 8260B**				Analyst: **jln** Prep Date/Time: **05/08/2019 13:02**	
1,1-Dichloroethene	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02
1,2-Dichloroethane	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02
2-Butanone	di	A	*ND*	1.0		mg/L	10	05/08/2019 13:02
Benzene	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02
Carbon tetrachloride	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02
Chlorobenzene	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02
Chloroform	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02
Tetrachloroethene	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02
Trichloroethene	di	A	*ND*	0.050		mg/L	10	05/08/2019 13:02

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Analytical Results

Date: *Monday, May 20, 2019*

Client: ArcelorMittal Indiana Harbor, LLC
Client Project: Recertification
Client Sample ID: Petroleum Coal Material
Sample Description:
Matrix: Solid

Work Order/ID: 19E0279-01
Sampled: 05/01/2019 10:00
Received: 05/06/2019 11:35

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **1311/8260B**					Analyst: **jln**
TCLP VOA Zero Head Extraction			Prep Method: **SW-846 1311/SW-846 8260B**					Prep Date/Time: **05/08/2019 13:02**
Vinyl chloride	di	A	*ND*	0.020		mg/L	10	05/08/2019 13:02
1,4-Dichlorobenzene	di	B	*ND*	0.10		mg/L	10	05/08/2019 13:02
Surr: 1,2-Dichloroethane-d4		S	107	74.5-132		%REC	10	05/08/2019 13:02
Surr: 4-Bromofluorobenzene		S	97.2	80-120		%REC	10	05/08/2019 13:02
Surr: Dibromofluoromethane		S	99.2	80-120		%REC	10	05/08/2019 13:02
Surr: Toluene-d8		S	101	80-120		%REC	10	05/08/2019 13:02

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Analytical Results

Date: *Monday, May 20, 2019*

Client: ArcelorMittal Indiana Harbor, LLC
Client Project: Recertification
Client Sample ID: Petroleum Coal Material
Sample Description:
Matrix: Solid

Work Order/ID: 19E0279-02
Sampled: 05/01/2019 10:00
Received: 05/06/2019 11:35

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Polychlorinated Biphenyls			Method: **SW-846 8082** Prep Method: **SW846 3550B**				Analyst: **JSH** Prep Date/Time: **05/08/2019 06:00**	
Aroclor 1016	di	A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1221	di	A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1232	di	A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1242	di	A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1248	di	A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1254	di	A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1260	di	A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1262		A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Aroclor 1268		A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Total PCB's		A	***ND***	190		µg/Kg	1	05/08/2019 14:28
Surr: Tetrachloro-m-xylene		S	85.0	40-130		%REC	1	05/08/2019 14:28
Surr: Decachlorobiphenyl		S	95.0	38-128		%REC	1	05/08/2019 14:28
Total Petroleum Hydrocarbons			Method: **SW-846 8015B** Prep Method: **SW846 3550B Mod**				Analyst: **ALS** Prep Date/Time: **05/08/2019 06:03**	
Diesel Range Organics	dik	A	***430***	100		mg/Kg	1	05/14/2019 20:23
TPH as Diesel	dik	A	***ND***	100		mg/Kg	1	05/14/2019 20:23
Gasoline Range Organics		A	***ND***	420	B	mg/Kg	1	05/17/2019 20:36
TPH as Gasoline	d	A	***ND***	100		mg/Kg	1	05/17/2019 20:36
Surr: Decafluorobiphenyl		S	87.9	51.3-134		%REC	1	05/14/2019 20:23
Ignitability (Open Cup)			Method: **ASTM D92-90 MOD**				Analyst: **DAT** Prep Date/Time: **05/08/2019 07:57**	
Ignitability		A	***> 170***	30.0		°F	1	05/08/2019 7:57
Paint Filter			Method: **SW-846 9095B** Prep Method: **SW-846 9095B**				Analyst: **EF** Prep Date/Time: **05/06/2019 16:20**	
Paint Filter	di	A	***No Free Liquids***	0.0		--	1	05/06/2019 16:25
pH			Method: **SW-846 9045D** Prep Method: **SW-846 9045D**				Analyst: **DAT** Prep Date/Time: **05/07/2019 07:46**	
pH	di	A	***8.93***	2.00		pH at 25°C	1	05/07/2019 7:46

ANALYTE TYPES: (AT)

A,B = Target Analyte
I = Internal Standard
M = Summation Analyte
S = Surrogate
T = Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank
DUP = Method Duplicate
BS = Method Blank Spike
MS = Matrix Spike
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CRL = Client Required Reporting Limit
PDS = Post Digestion Spike
QCS = Quality Control Standard
ICSA = Interference Check Standard "A"
ICSAB = Interference Check Standard "AB"
BSD = Method Blank Spike Duplicate
MSD = Matrix Spike Duplicate
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
OPR = Ongoing Precision and Recovery Standard
SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

[d] Illinois EPA drinking water, wastewater and solid waste analysis (#200064)
[i] Kansas Dept Health & Env. NELAP (#E-10397)
[k] Kentucky EPPC analysis Underground Storage Tanks (#75)

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

B:	The target analyte was detected in the method blank at or above the reported quantitation limit.
RL:	Reporting Limit
RPD:	Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 25.0°C

Comments

Size reduction performed at lab

Cooler Inspection Checklist

Ice Present or not required?	No
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes
Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes
Sample type identified on COC?	Yes
Correct type of Containers Received	Yes
Correct number of containers listed on COC?	Yes
Containers Intact?	Yes
COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes
Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes
Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes
Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes

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CHAIN OF CUSTODY RECORD

Number 149790

Instructions on back

Lab Report Address

Client Name: ArcelorMittal IH WestC
Address: 3001 Dickey Rd
City, State, Zip: East Chicago IN 46312
Contact: Mariya TrenKinshy
Telephone No.: 219-399-5473

Invoice Address

Client Name: Same
Address:
City, State, Zip:
Contact:
Telephone No.:

Turnaround Time

☒ Routine (5 to 7 business days)
☐ RUSH* (notify lab)
(needed by)

Report Type

☐ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

TO BE COMPLETED BY MICROBAC

Temperature Upon Receipt (°C) 25-7-0.7
Therm ID
Holding Time 25°C
Samples Received on Ice? ☐ Yes ☒ No ☐ N/A
Custody Seals Intact? ☐ Yes ☐ No ☒ N/A

Send Report via: ☐ Mail ☐ Fax ☒ e-mail (address) Mariya.TrenKinshu@arcelormittal.com
Send Invoice via: ☐ Mail ☐ Fax ☐ e-mail (address)

Project: Recertification
Location:
PO No.:
Compliance Monitoring? ☐ Yes ☒ No
☐ Agency/Program

Sampled by (PRINT): Jay Hutsing
Sampler Signature:
Sampler Phone No.: 219-712-1380

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)
** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

REQUESTED ANALYSIS

Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	TCLP metals	VOCs/Semi VOCs	PCM	Total PCM	Flash Point	Paint Filter	pH				Additional Notes
Petroleum Coke material	5-1-19	10:00	1	S	G	N/A	X	X	X	X	X	X	X				19E0279-02

19E0279 Carey Gadzala ArcelorMittal - IH West Recertification 05/08/2019

Possible Hazard Identification ☐ Hazardous ☐ Non-Hazardous ☐ Radioactive
Sample Disposition ☐ Dispose as appropriate ☐ Return ☐ Archive

Comments

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
	5-6-19 11:35 AM		
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
			5-6-19/1135

rev.12/26/2017

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